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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/729,892

12/08/2003

Joseph K. Fauty

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02/28/2006

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EXAMINER

GRAYBILL, DAVID E

ART UNIT

PAPER NUMBER

2822

DATE MAILED: 02/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b> 10/729,892	<b>Applicant(s)</b> FAUTY ET AL	
	<b>Examiner</b> David E. Graybill	<b>Art Unit</b> 2822	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 01 December 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-11 and 18 is/are pending in the application.
- 4a) Of the above claim(s) 18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

Newly submitted claim 18 is directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: It is drawn to the non-elected product.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claim 18 is withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4, 6 and 9-11 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Eytcheson (4490902).

At column 3, line 54 to column 12, line 13, Eytcheson discloses a method of forming a semiconductor package comprising: providing a leadframe 32 having a main panel 34, 36, 38, 48 a cavity section (defined by 48b, 50b), and a plurality of leads 42a-42c extending from the main panel into the cavity section, the main panel no greater than a first distance (equal to 0) from an outer edge (defined by 48b, 50b) of the cavity section

and at least a first lead of the plurality of leads extending no greater than the first distance from the cavity section toward the main panel (at least before the step of removing); encapsulating the cavity section of the leadframe to form a package body 52; mechanically removing a first portion 48a of the main panel and leaving a second portion of the main panel to form a portion of the first lead extending greater than the first distance from the package body; and excising "cutting" a third "remaining" portion of the main panel away from the first lead; wherein providing the leadframe having the main panel, the cavity section, and the plurality of leads extending from the main panel into the cavity section, the main panel no greater than the first distance from an outer edge of the cavity section includes forming the first distance no greater than approximately fifty microns; wherein excising the third portion of the main panel away from the first lead includes leaving a fourth portion 38 of the main panel attached to an end of at least one lead of the plurality of leads; plating "flash" exposed portions of the plurality of leads; wherein mechanically removing the first portion of the main panel and leaving the second portion of the main panel includes trimming the main panel to form the portion of the plurality of leads; wherein mechanically removing the first portion of the main panel and leaving the second portion of the main panel inherently includes selectively forming the second portion of the main panel into a number (one) of leads that is less than all (two) of

the plurality of leads; wherein removing the first portion of the main panel and leaving the second portion of the main panel includes forming the second portion of the main panel into a number of leads that is equal to all of the plurality of leads; wherein providing the leadframe having the main panel, the cavity section, and the plurality of leads extending from the main panel into the cavity section, the main panel no greater than the first distance from the outer edge of the cavity section includes forming the leadframe devoid of a dam-bar between the main panel and the cavity section.

To further clarify the disclosure of mechanically removing the first portion 48a, it is noted that Eytcheson discloses "a shearing step that pushes dam bar portions 48a and 48b completely out of the planes occupied by the thickness of the lead frame." Therefore, the first portion 48a is mechanically removed from the planes. In addition, Eytcheson discloses, "there is little . . . space between the cut edges of dam bar portions 48a and 50a and their contiguous finger lead and side rail edges," "there may be a wider kerf or gap resulting between them [48a and 48b] and their contiguous finger leads and side rails," and, "even if there is some sort of gap." Therefore, Eytcheson discloses that first portion 48a is mechanically removed from the space, kerf and gap.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim 7 rejected under 35 U.S.C. 103(a) as being unpatentable over Eytcheson (4490902).

Eytcheson is applied for the same reasons it was applied to claim 1.

However, Eytcheson does not appear to explicitly disclose wherein mechanically removing the first portion of the main panel and leaving the second portion of the main panel includes forming the portion of the first lead extending no greater than about fifty microns from the package body.

Nonetheless, as cited *supra*, Eytcheson discloses that mechanically removing the first portion of the main panel and leaving the second portion of the main panel includes forming the portion of the first lead extending a distance from the package body that is a result effective variable. Moreover, as reasoned from well established legal precedent, it would have been an obvious matter of design choice bounded by well known manufacturing constraints and ascertainable by routine experimentation and optimization to choose the particular claimed distance limitation because applicant has not disclosed that, in view of the applied prior art, the limitation is for a particular unobvious purpose, produces an unexpected result, or is otherwise critical, and it appears *prima facie* that the process would possess utility using another distance. Indeed, it has been held that optimization of range limitations are *prima facie* obvious absent a disclosure that the limitations are for a particular unobvious purpose, produce an unexpected result, or are otherwise critical. See MPEP 2144.05(II): "Generally, differences in concentration or temperature will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such concentration or temperature is critical. '[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation.'" *In re Aller*, 220 F.2d 454, 105 USPQ 233, 235 (CCPA 1955). See also *In re Hoeschele*, 406

F.2d 1403, 160 USPQ 809 (CCPA 1969), Merck & Co. Inc. v. Biocraft Laboratories Inc., 874 F.2d 804, 10 USPQ2d 1843 (Fed. Cir.), cert. denied, 493 U.S. 975 (1989), and In re Kulling, 897 F.2d 1147, 14 USPQ2d 1056 (Fed. Cir. 1990). As set forth in MPEP 2144.05(III), "Applicant can rebut a prima facie case of obviousness based on overlapping ranges by showing the criticality of the claimed range. 'The law is replete with cases in which the difference between the claimed invention and the prior art is some range or other variable within the claims. . . . In such a situation, the applicant must show that the particular range is critical, generally by showing that the claimed range achieves unexpected results relative to the prior art range.' In re Woodruff, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990). See MPEP § 716.02 - § 716.02(g) for a discussion of criticality and unexpected results."

Claims 5 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eytcheson as applied to claim 4, and further in combination with Johnson (5070039) and Cabahug (20030193080).

Eytcheson does not appear to explicitly disclose excising the end of the at least one lead of the plurality of leads from the main panel.

Nonetheless, at column 4, lines 8-15, Johnson discloses excising the end of at least one lead 20 of a plurality of leads from a main panel 26. Moreover, it would have been obvious combine this disclosure of Johnson



with the disclosure of Eytcheson because it would separate the leads for external electrical connection.

Also, Eytcheson and Johnson do not appear to explicitly disclose excising the lead after plating exposed portions of the plurality of leads; and plating the plurality of leads and the main panel prior to the step of forming the first portion of the main panel into the portion of the first lead.

Regardless, at paragraphs 57-59, Cabahug discloses pre-plating a leadframe 22 prior to additional manufacturing steps. Furthermore, it would have been obvious to combine this disclosure of Cabahug with the disclosure of Eytcheson and Johnson because, as disclosed by Cabahug as cited, it would provide high adhesion to epoxy molding material, advantageously eliminate post plating processes, and provide wettable surfaces for solder.

Applicant's amendment and remarks filed 12-1-5 have been fully considered, are addressed by the rejections *supra*, and are further addressed *infra*.

Applicant argues, "a three way restriction of this type is proper only when one of the three categories are unpatentable."

This argument is respectfully deemed unpersuasive because, as elucidated in the rejections, one of the three categories is unpatentable. In any case, this argument is respectfully traversed because a three way restriction of this type is not only proper when one of the three categories

are unpatentable. To further clarify, as set forth in MPEP 806.05(i) [R-3] "Where claims to all three categories, product, process of making, and process of use, are included in a national application, a three way requirement for restriction can only be made where the process of making is distinct from the product." In the instant application, as elucidated in the restriction requirement, the process of making is distinct from the product.

The art made of record and not applied to the rejection is considered pertinent to applicant's disclosure. It is cited primarily to show inventions relevant to the examination of the instant invention.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action. For information on the status of this application applicant should check PAIR:

Art Unit: 2822

Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

**Alternatively, applicant may contact the File Information Unit at (703) 308-2733. Telephone status inquiries should not be directed to the examiner. See MPEP 1730VIC, MPEP 203.08 and MPEP 102.**

Any other telephone inquiry concerning this communication or earlier communications from the examiner should be directed to David E. Graybill at (571) 272-1930. Regular office hours: Monday through Friday, 8:30 a.m. to 6:00 p.m.  
The fax phone number for group 2800 is (571) 273-8300.



David E. Graybill  
Primary Examiner  
Art Unit 2822

D.G.  
14-Feb-06